

Translation

PATENT COOPERATION TREATY

PCT/EP2003/008323



# PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2002P08374WO	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/008323	International filing date (day/month/year) 28 July 2003 (28.07.2003)	Priority date (day/month/year) 19 August 2002 (19.08.2002)
International Patent Classification (IPC) or national classification and IPC H03M 1/00		
Applicant SIEMENS AKTIENGESELLSCHAFT		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.  <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  These annexes consist of a total of <u>6</u> sheets.
3. This report contains indications relating to the following items:  I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 01 March 2004 (01.03.2004)	Date of completion of this report 12 November 2004 (12.11.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/008323

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

- ☐ the international application as originally filed
- ☒ the description:  
pages \_\_\_\_\_, 1, 3-7 \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, 2, 2a \_\_\_\_\_, filed with the letter of \_\_\_\_\_ 12 July 2004 (12.07.2004)
- ☒ the claims:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, 1-8 \_\_\_\_\_, filed with the letter of \_\_\_\_\_ 12 July 2004 (12.07.2004)
- ☒ the drawings:  
pages \_\_\_\_\_, 1/2-2/2 \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/EP 03/08323

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	1-8	YES
	Claims		NO
Inventive step (IS)	Claims	1-8	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-8	YES
	Claims		NO

### 2. Citations and explanations

1. This international preliminary examination report makes reference to the following search report citations:

D1: XP010140531 JANSSON C ET AL: 'A 1-MHz and 16-bit/spl Sigma//spl Delta/DAC with a 224th-order reconstruction FIR-filter using only 9 nonzero taps' PROCEEDINGS., IEEE INTERNATIONAL  
D2: US-A-5 323 157 (IRWIN JAMES S ET AL)  
21 June 1994.

2. The present application complies with the requirements of PCT Article 33(1) to (3), because the subject matter of the claims is novel and involves an inventive step.

- 2.1 Document D1 is the closest prior art for the present application. Document D1 discloses a digital-analog converter (DAC), the arrangement comprising a plurality of delay elements which form a filter structure.

In contrast to the present application, D1 does not disclose that the delay times which are specifically assigned to the respective delay elements correspond to a complete or half clock period, and that the clock signal is chosen in such a way that the filter

characteristic is automatically adjusted when a change occurs in the carrier frequency range of the output signal.

- 2.2 The technical problem is therefore that of designing a DAC which can be tuned to different carrier frequency ranges.
- 2.3 Document D2 discloses a DAC comprising delay elements which obtain a partial cycle period of the clock signal. The solution indicated in claim 1, namely adjustment of the filter characteristic to the change in carrier frequency range of the output signal by suitable choice of the clock signal, is not suggested by D2 or any other of the international search report citations.

The subject matter of independent claim 1 is therefore novel and inventive.

- 2.4 The dependent claims contain all the features of claim 1, and therefore also comply with the requirements of PCT Article 33(1) to (3) with regard to novelty and inventive step.